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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,717	03/04/2004	Kazuhiro Hattori	118884	5351

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

OLSEN, ALLAN W

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/791,717

Applicant(s)

HATTORI, KAZUHIRO

Examiner

Allan Olsen

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 1,2 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/4/04; 4/18/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Applicant's election with traverse of Group II, claims 3-9, in the reply filed on March 13, 2006 is acknowledged. The traversal is on the grounds that claimed product exhibits structural features that are a result of the process and apparatus by which it is made. Applicant states:

"Such structural features include, for example, having precisely etched areas of 150 nm or less (P3/L9-13, Fig. 9A-9C). The Restriction Requirement has failed to establish that such structural features of claims 3-9 can be produced by either of plasma etching with a chlorine containing etchant or ion milling. Accordingly, the Restriction Requirement has failed to establish that the magnetic materials of Group II can be made by a materially different process than the methods of Group 1."

This is not found persuasive for at least the following three reasons.

- 1) The feature that applicant relies (i.e., the width of etching target) is primarily a function of the masking layer (e.g., the size of mask openings) rather than the etching gases and technique.
- 2) Page 22 of applicant's specification indicates that other processes can be used to make the claimed product. The specification states: "In other words, it is presumed that magnetic materials with grooves with a width of 150 nm or less formed therein have **probably** been produced using reactive ion etching techniques according to the present invention" (emphasis added)".
- 3) The prior art applied in the following rejections teach an etched magnetic product having an etching target width of 150 nm or less that is made by a different method and with a different apparatus than those claimed.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 2 and 10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 recites the limitation "A magnetic recording medium comprising the magnetic material...". There is insufficient antecedent basis for "the magnetic material".

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 3-9 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US Patent 5,432,494 issued to Inoue et al.

Inoue teaches etching magnetic layers with target areas less than 150 nm and with s etched surface being at an angle of between 45° and 85° with respect to a surface of the material. See column 2, lines 18-68.

Claims 3, 5, 6 and 8 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US Patent Application Publication 2002/0136927 of Hieda et al.

Paragraph [0131] of Hieda et al. reads:

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[0131] In the first step, a magnetic layer, a SiO₂ film having a thickness of about 20 nm and an electron beam resist are successively formed in the order mentioned on a glass substrate. The resist film is processed by electron beam lithography so as to form a resist pattern in which a spiral groove having a width of about 100 nm is defined by a convex portion having a width of about 150 nm. The substrate is dipped in an aqueous gold colloid solution containing fine gold particles having a size of 40 nm, followed by rinsing the substrate with pure water. As a result, the fine gold particles are regularly arrayed within the groove formed between the resist patterns. Then, the SiO₂ film is etched to the magnetic layer by RIE, followed by further etching the magnetic layer by Ar ion milling. After removal of the SiO₂ film, the substrate is observed with an electron microscope. As a result, recording cells each having a size of 40 nm are found to have formed a close-packed structure within the recording track band having a width of about 100 nm so as to form two rows of sub-tracks.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hieda et al.

Hieda et al. do not teach that the magnetic material has processed surface etched to be inclined at an angle of 45° to 85° relative to a surface of the material.

It would have been obvious to one skilled in the art to etch a the magnetic material such that an etched surface was inclined at an angle of 45° to 85° relative to a surface of the material because this would provide high quality magnetic tracks.

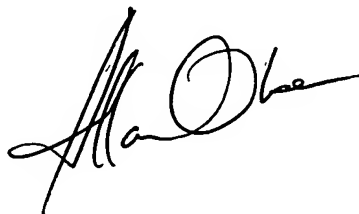
Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allan Olsen whose telephone number is 571-272-1441. The examiner can normally be reached on M-F 1-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Allan Olsen', with a stylized, cursive script.

Allan Olsen
Primary Examiner
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